

SEP 29 2016

W-2658

ENVIRONMENTAL AND COMMUNITY IMPACT ANALYSIS **PLANNING BOARD**  
"THE VILLAGE AT INSTITUTE ROAD" **GRAFTON, MA**

**NATURAL ENVIRONMENT:**

- A. **Air and Noise Pollution** – During construction, property in the immediate area will be impacted by noise and dust generated by the equipment utilized in building the roads and installing the utilities. The dust is generally controlled by using water to irrigate the areas traversed by construction vehicles. With the exception of the of the buildings on the Commonwealth of Massachusetts property on the east side of Institute Road, all work will be greater than 500 feet from existing residences and/or buildings; and after construction of the first 150 feet of road at the southern end of the site, all work will be greater than 500 feet from all existing buildings. The preservation of Undisturbed Vegetated Open Space, and undisturbed vegetation proposed on each lot will keep dust from reaching beyond the boundaries of the project. At the conclusion of construction, each home site will be stabilized with some sort of ground cover so the dust level will be reduced to the normal level of a residential neighborhood.

Construction vehicles and activities will generate noise. The level can be minimized through proper maintenance of vehicles. The projects vegetated buffers will also help muffle the sounds of construction. Most of the proposed construction is a significant distance away from any of the abutting properties and therefore should have little impact on their living conditions..

The vernal pool identified on the property will be protected. Both the Definitive plan layout maintains a minimum of a 100 foot buffer to the vernal pool.

- B. **Storm Water** – The project drainage system has been designed in compliance with the Massachusetts Stormwater Regulations. First, the rate and volume of storm water discharge will be mitigated through detention basin(s). These structures are designed to mitigate flows off site. The drainage system is also designed to remove suspended solids in the storm water runoff. This is achieved through the use of deep sump catch basins, sediment forebays, detention basins, grass swales and, possibly, a stormwater particle separator. The projected detention basin is located in suitable soils for the recharging of the ground water table. The drainage for the project is discharged towards existing water bodies.
- C. **Land** – The project has been designed to avoid the most sensitive areas on the property. A wetland and vernal pool is located on the east side of the site along Institute Road. The project has been designed so that the wetland, vernal pool and the 100 foot buffer to the wetland/vernal pool area is protected. It is anticipated that the roadway and housing construction will necessitate the removal of ledge. The blasted material will be crushed onsite and utilized as roadway and driveway base. A Sedimentation and Erosion Control Plan that has been prepared as part of the Definitive Subdivision filing for review and comment by the Grafton Planning Board and the Grafton Conservation Commission. Prior to construction, a Notice of Intent will be filed with the Environmental Protection Agency for storm water discharges associated with construction activities (NPDES Permit). The NOI will include a detailed "Storm Water Pollution Prevention Plan", which details pre-construction, during construction and post-construction stabilization methods. It also outlines maintenance and inspection procedures for the storm water management facilities constructed as part of the project.

- D. **Plants and Wildlife** – The project site is currently forested. At a minimum, approximately 3.2 acres of open space will be preserved to protect the existing wetland and vernal pool located on the site. Wildlife in the project area will most likely adapt to the disruption by limiting their activities to the preserved as Open Space, to the 88+ acres of Town owned land to the west or to the 81+ acres state owned land to the east. The wetlands and vernal pool onsite have been protected by inclusion into the Open Space area, providing an important source of water and food for wildlife. Significant trees have been located and are shown on the plans. Grading was adjusted along the road and on the lots in an effort to save as many of these trees as possible.

Based on the on-line Natural Heritage maps, the project area is not within an Estimated or Priority Habitat Area.

- E. **Water Supply** – The project will be serviced by the Grafton Water District. There are 46 proposed lots in this development. With an average of 262.5 gallons per day per household, the water demand is estimated at 12,075 gallons per day. The Water District recently upgraded the water line in Institute Rd. It appears that the existing system will provide adequate water volume and pressure throughout the project for drinking water purposes, and fire flow protection.
- F. **Sewage Disposal** – Based on Title 5 flow calculations (required by the Sewer Department), the estimated average daily wastewater flow from the project is 20,240 gallons per day. The effluent will be directed to a new wastewater pump station to be located near Westboro Road. The pump station will pump wastewater through a force main to the existing gravity sewer system. The nearest sewer manhole is located by the western entrance of Equipment Car Care of Grafton, approximately 800 feet to the west. From this location, it will flow by gravity to the Worcester Street pump station where it is pumped to the sewage treatment plant located off Depot Street. After treatment the water is discharged into the Blackstone River.

## MAN-MADE ENVIRONMENT

- A. **Existing Neighborhood Land Uses** – The property to the north of the site has a mixture of businesses and residential houses. The property to the west is undeveloped and owned by the Town of Grafton. The area to the east is owned by the Commonwealth of Massachusetts and a majority of this land is undeveloped. The land to the south is undeveloped. A portion of this land is owned by the Commonwealth of Massachusetts with the remaining land owned by a private citizen.
- B. **Zoning** – The portion of the site to be developed is zoned for residential use. The remaining land to the north, which will be separated from the project area, is zoned for Office and Light Industrial.
- C. **Architecture** – New England Colonial

## PUBLIC SERVICES

- A. **Schools** – US Census statistics indicate that the average family size is 3.07 people. In the Town of Grafton the average household size is 2.54 persons. The Massachusetts Association of Realtor's quotes the following statistics: more than 60% of current homebuyers have no children. A four bedroom home in Massachusetts will generate approximately .74 school age children per unit. This means that the project will add about 34 children to the K through 12 system. According to the 2015 Town Report 2014-2015 school year, there were approximately 3,200 students enrolled in Grafton Preschool to 12. Therefore this project would account for a 1.06% increase in the student population if all the houses were built in the same year and all the children

would enter the school system in the same year. Based on the 2014-2015 School Department budget, Grafton spends approximately \$9,000.00 per student in the system. Assuming that all students entered the school system at the same time, the school budget will increase by approximately \$306,251 or approximately \$6,657.63 per house. These values do not include reimbursements from the state. The tax rate for the year 2016 is \$16.75/thousand. Assuming that the average single family house in this project will be \$450,000.00 that the taxes per house hold would be \$7,537.50.

- B. **Police** – There are roughly 110 miles of road in the Town of Grafton and 18,371 people, as of 2014. The project will result in an additional 3,976 feet of new road or about 0.75 miles. So the project will result in a 0.68% increase in the amount of roadways to be patrolled. A patrol car should not take more than 3 minutes to travel over the roads in the project. Current US Census Bureau statistics indicate that the average family contains 3.07 people. This means that the project will add about 142 people to the population of Grafton. This amounts to an increase of 0.77.
- C. **Fire** – The Fire Department responded to 542 calls during 2015 fiscal year. Based on population figures, this translates to an additional 4.1 calls in a year for the increase in population. Based on fiscal year 2015, the Fire Department spent approximately \$34.71 per person living in the Town of Grafton. This projects to an additional cost of \$4,932.00 for the project or \$107.21 per house.
- D. **Highway** – The Highway Department maintained approximately 110 miles of roadway during 2015 with a budget of \$1,237,396. Upon full build out, the project will add approximately 0.75 miles of roadway to the Town's roadway system. Based on a direct proportion it is estimated that the Highway Department's budget will increase by 0.68% as a result of the new roadways. This projects to an additional cost of \$8,436 for the project or \$183.39 per house.
- E. **Solid Waste** – The 2015 budget for sanitation totaled \$895,888 for a total population of 18,371. Based on a per capita rate of \$48.77, it is estimated that the budget for the Sanitation Department will increase by approximately \$5,698.30 for the project or 123.88 per house.
- F. **Recreation** – At a minimum, the project will set aside 3.2 Acres of Open Space along Institute Road. This open space will surround the existing wetland, vernal pool and 100 foot buffer to the wetland/vernal pool area.
- G. **Traffic** – A full Traffic Study was submitted with the Special Permit Application. The study shows that the project has little or no significant impact to the intersections in close proximity to the project site.

## AESTHETICS

- A. **Lighting** – Street lights are proposed at all street intersections and approximately every 300 feet along the proposed roadways in accordance with Subdivision Rules & Regulations. The lights shall be installed to conform to the type and style specified by the Grafton Board of Selectmen. Lights must be of a type approved by Massachusetts Electric Company.
- B. **Landscaping** – Trees will be planted in accordance with the Rules and Regulations of the Grafton Planning Board. The trees will be of a nursery stock conforming to the standards of the American Association of Nurserymen. The type shall be in accordance with the recommended street trees and shrubs found in Schedule D of the Rules & Regulations. A grass strip shall be planted between the traveled way and the sidewalk.

- C. **Visual** – The project is designed so that only 5 lots will be developed along Institute Road. Additionally, the proposed open space will abut Institute road providing a natural buffer to a majority of the subdivision. The geometry of the roadways and the distance of the building lots from the existing roads and abutting parcels will prevent the project from having a significant impact on immediately abutting roads and parcels.
- D. **Planning** – Careful consideration of the existing topography and resource areas on the site was utilized in the layout of the proposed roadways for both the Flexible and Conventional development plans. The existing wetland, vernal pool and 100 foot buffer to the wetland/vernal pool resource areas will be protected and incorporated in a proposed open space parcel. Also, the alignments for the roadways were selected in an attempt adhere as closely with the existing topography and reduce the extent of the overall site grading requirements.